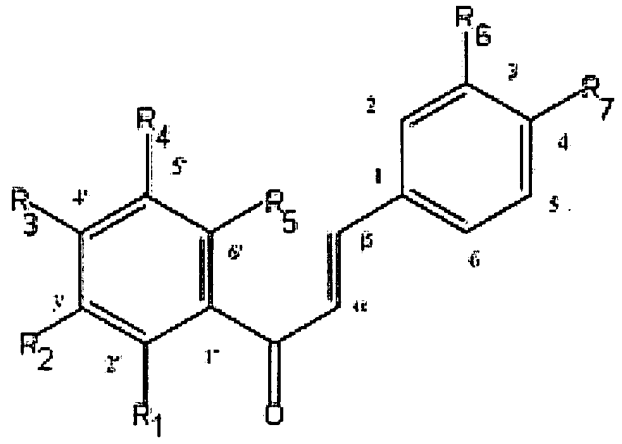
CLAIMS

What is claimed is:

1. A method for treating bladder or urinary tract cancer in a human or veterinary patient, said method comprising the step of administering to the patient a therapeutically effective amount of a compound having the formula:



Formula 1

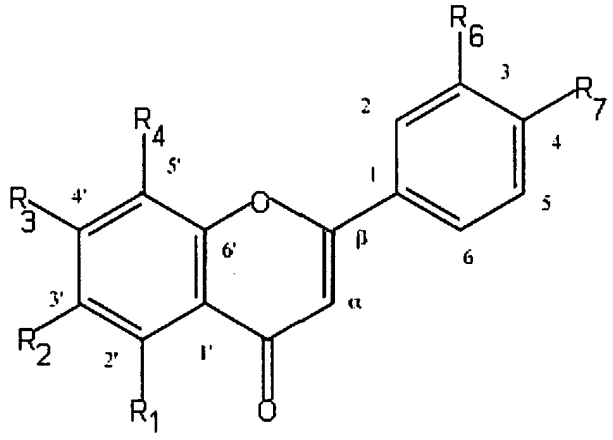
wherein;

R_1, R_3, R_5, R_6 and R_7 are selected from H, OH, O-Alkyl, O-Alkenyl, O-Acyl; O-Glucosyl, O-Sulphate,)-Glucoronate and O-Amino Acid, halogen, amino, substituted amino and oxygen atom;

R_2 and R_4 are selected from H, alkyl and alkenyl, wherein the said alkyl and alkenyl groups have from 1 to10 carbon atoms and up to 4 double bonds; and

the hydrogen on the α-carbon of the olefinic double bond may or may not be substituted with a methyl, phenyl or substituted phenyl group.

2. A method according to Claim 1, where R_5 is an oxygen atom that is connect to the β-carbon atom of the olefinic double bond to form a compound having the formula:



Formula 2

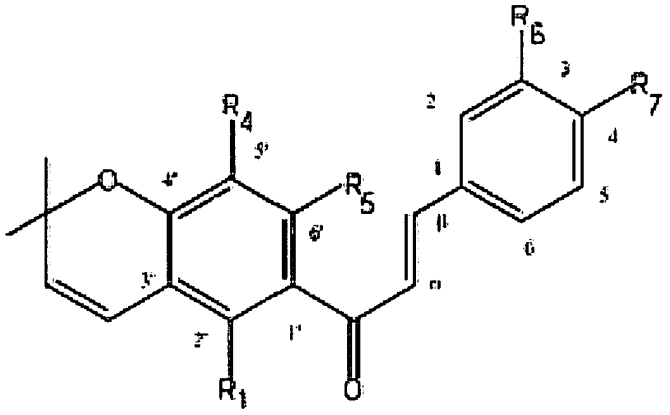
wherein;

R_1, R_3, R_6 and R_7 are selected from H, OH, O-Alkyl, O-Alkenyl, O-Acyl; O-Glucosyl, O-Sulphate,)-Glucoronate and O-Amino Acid, halogen, amino, substituted amino and oxygen atom;

R_2 and R_4 are selected from H, alkyl and alkenyl, wherein the said alkyl and alkenyl groups have from 1 to10 carbon atoms and up to 4 double bonds; and

the hydrogen on the α-carbon of the olefinic double bond may or may not be substituted with a methyl, phenyl or substituted phenyl group.

3. A method according to Claim 1, where R_2 is prenyl or other alkenyl and R_3 is OH, wherein R_2 and R_3 are combined to form a cyclic ring structure and a compound having the formula :



Formula 3A

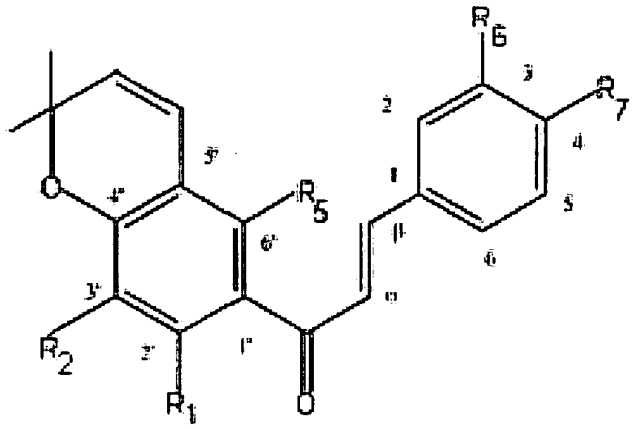
wherein;

R_1, R_5, R_6 and R_7 are selected from H, OH, O-Alkyl, O-Alkenyl, O-Acyl; O-Glucosyl, O-Sulphate,)-Glucoronate and O-Amino Acid, halogen, amino, substituted amino and oxygen atom;

R_4 is selected from H, alkyl and alkenyl, wherein the said alkyl and alkenyl groups have from 1 to10 carbon atoms and up to 4 double bonds; and

the hydrogen on the α-carbon of the olefinic double bond may or may not be substituted with a methyl, phenyl or substituted phenyl group.

4. A method according to Claim 1, wherein R_4 is prenyl or other alkyl, R_3 is OH and said R_3 and R_4 are combined to form a cyclic ring structure and a compound of the formula:



Formula 3B

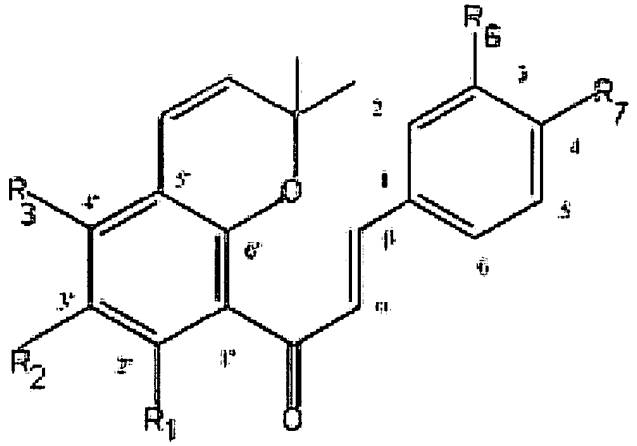
wherein;

R_1, R_5, R_6 and R_7 are selected from H, OH, O-Alkyl, O-Alkenyl, O-Acyl; O-Glucosyl, O-Sulphate,)-Glucoronate and O-Amino Acid, halogen, amino, substituted amino and oxygen atom;

R_2 is selected from H, alkyl and alkenyl, wherein the said alkyl and alkenyl groups have from 1 to10 carbon atoms and up to 4 double bonds; and

the hydrogen on the α-carbon of the olefinic double bond may or may not be substituted with a methyl, phenyl or substituted phenyl group.

5. A method according to Claim 1 wherein R_4 is prenyl or other alkyl, R_5 is OH and are combined to form a cyclic ring and a compound having the formula:



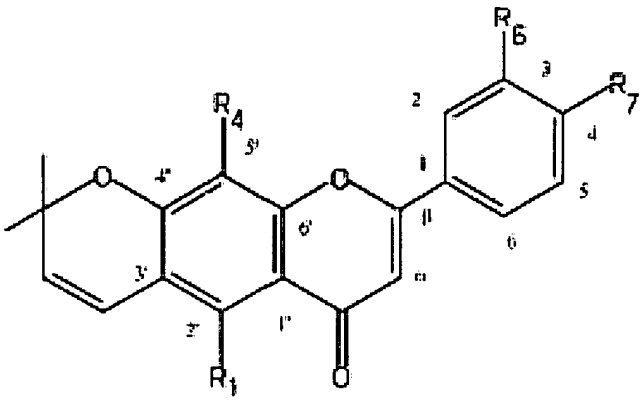
Formula 3C

R_1, R_3, R_6 and R_7 are selected from H, OH, O-Alkyl, O-Alkenyl, O-Acyl; O-Glucosyl, O-Sulphate,)-Glucoronate and O-Amino Acid, halogen, amino, substituted amino and oxygen atom;

R_2 is selected from H, alkyl and alkenyl, wherein the said alkyl and alkenyl groups have from 1 to10 carbon atoms and up to 4 double bonds; and

the hydrogen on the α-carbon of the olefinic double bond may or may not be substituted with a methyl, phenyl or substituted phenyl group.

6. A method according to Claim 1, where R_2 is prenyl or other alkenyl, R_3 is OH and R_2 and R_3 combine to form a cyclic ring and a compound of formula:



Formula 4A

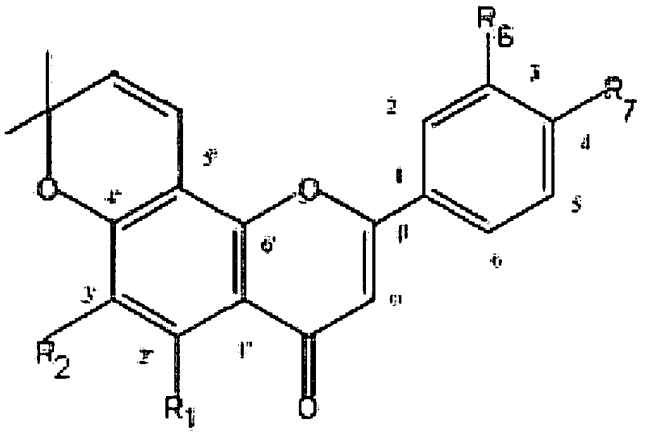
wherein;

R_1, R_6 and R_7 are selected from H, OH, O-Alkyl, O-Alkenyl, O-Acyl; O-Glucosyl, O-Sulphate,)-Glucoronate and O-Amino Acid, halogen, amino, substituted amino and oxygen atom;

R_4 is selected from H, alkyl and alkenyl, wherein the said alkyl and alkenyl groups have from 1 to10 carbon atoms and up to 4 double bonds; and

the hydrogen on the α-carbon of the olefinic double bond may or may not be substituted with a methyl, phenyl or substituted phenyl group.

7. A method According to Claim 1 wherein R_4 is prenyl or other alkenyl, R_3 is OH and wherein R3 and R4 are combined to form a cyclic ring structure and a compound having the formula:



Formula 4B

wherein;

R_1, R_6 and R_7 are selected from H, OH, O-Alkyl, O-Alkenyl, O-Acyl; O-Glucosyl, O-Sulphate,)-Glucoronate and O-Amino Acid, halogen, amino, substituted amino and oxygen atom;

R_2 is selected from H, alkyl and alkenyl, wherein the said alkyl and alkenyl groups have from 1 to10 carbon atoms and up to 4 double bonds; and

the hydrogen on the α-carbon of the olefinic double bond may or may not be substituted with a methyl, phenyl or substituted phenyl group.

8. A method according to Claim 1, wherein the compound is 4'-hydroxy-4,2',6'-trimethoxychalcone.

9. A method according to Claim 1, wherein the compound is 2'-hydroxy-4,4',6'-trimethoxychalcone (Flavokawain A).

10. A method according to Claim 1, wherein the compound is 2'-4-dihydroxy-4',6'-dimethoxychalcone (Flavokawain C).

11. A method according to Claim 1, wherein the compound is 2',4,6'-trihydroxy-4-methoxy-3'-prenylchalcone (Xanthogalenol).

12. A method according to Claim 1, wherein the compound is 2',6',4-trimethoxy-4'-hydroxy-3'-prenylchalcone.

13. A method according to Claim 2, wherein where the compound is luteolin.

14. A method according to Claim 2, wherein the compound is apigenin.

15. A method according to Claim 3, wherein the compound is 2',6'-dimethoxy-4-hydroxy-3',4'-dehydrocyclohexanochalcone.

16. A method according to Claim 4, wherein the compound is 2',6'dimethoxy-4-hydroxy-4',5'-dehydrocyclohexanochalcone.

17. A method according to Claim 5, wherein the compound is 2',4-dimethoxy-4'-hydroxy-5',6'-dehydrocyclohexanochalcone.

18. A method according to Claim 6, wherein the compound is 5,4'-dihydroxy-6,7-dehydrocyclohexanoflavone.

19. A method according to Claim 7, wherein the compound is 5-hydroxy-4'-hydroxy-7,8- dehydrocyclohexanoflavone 4'-glucoside.

20. A method according to claim 1 wherein the compound is administered orally.

21. A method according to Claim 1, wherein the compound is administered intravesically.